

Fig. 1 (Prior Art)

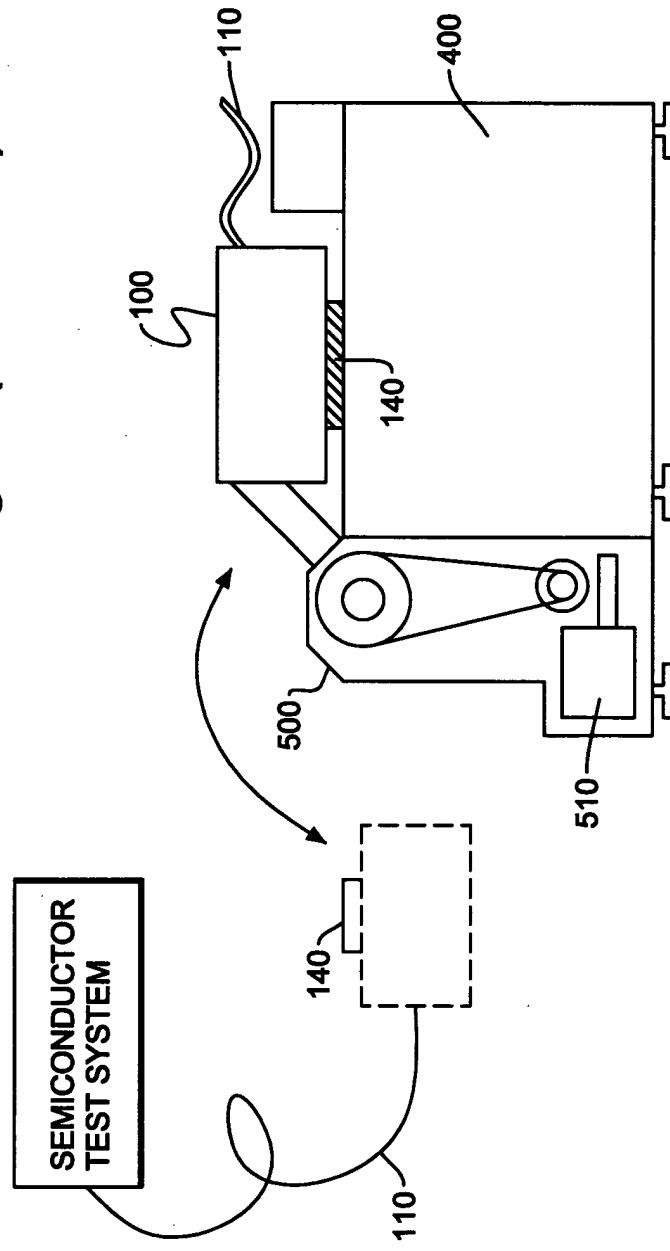


Fig. 2 (Prior Art)

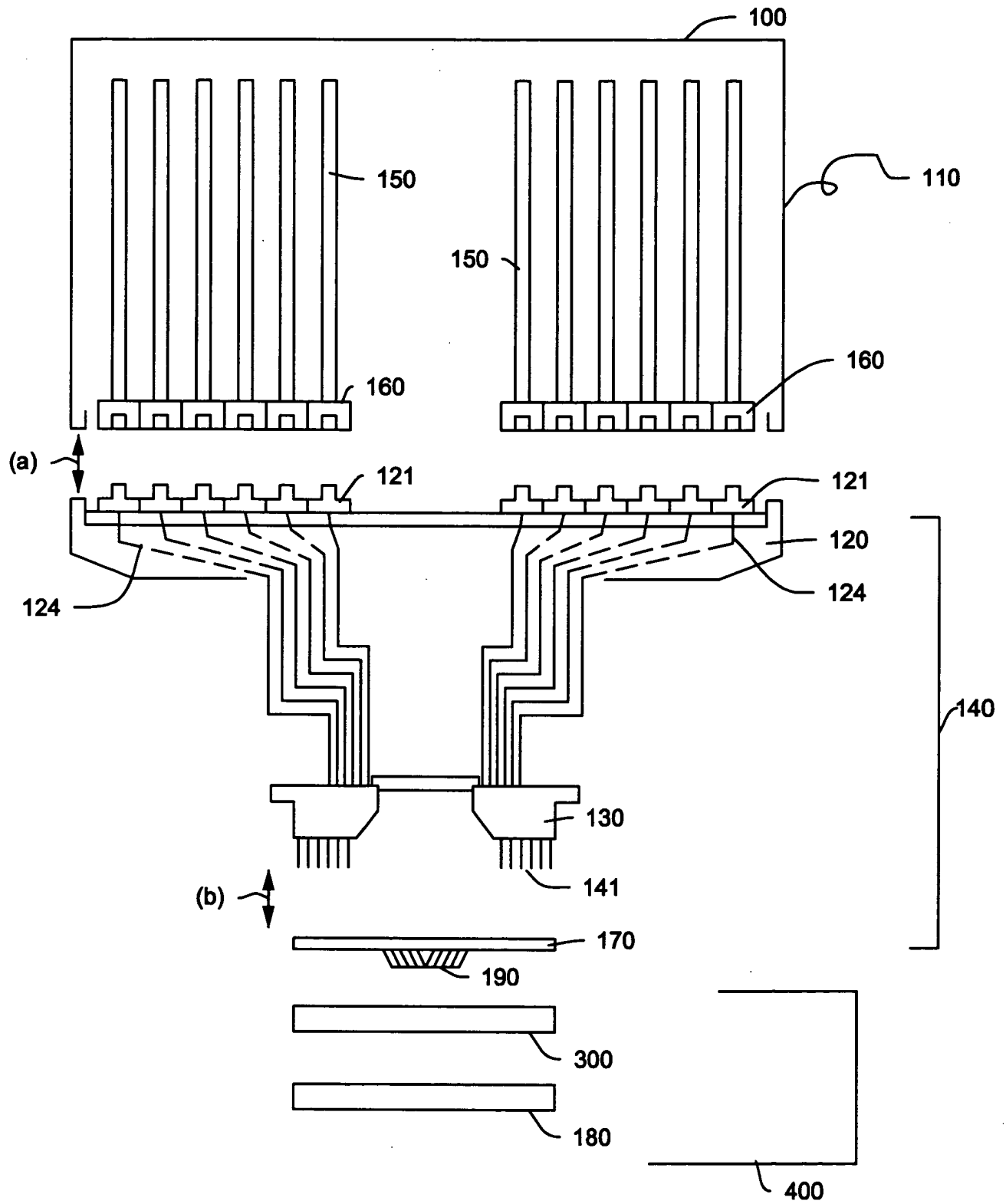


Fig. 3 (Prior Art)

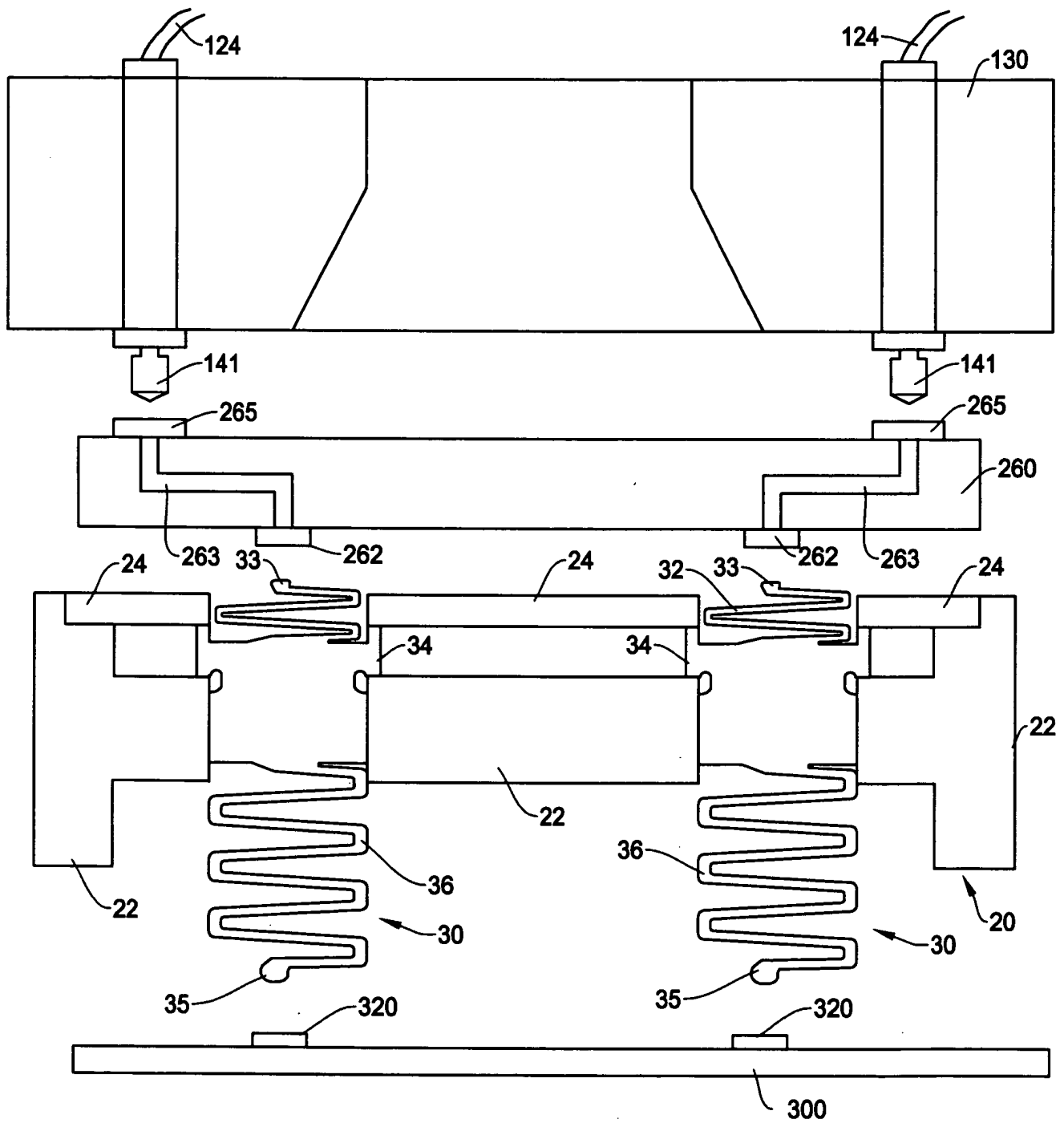


Fig. 4 (Prior Art)

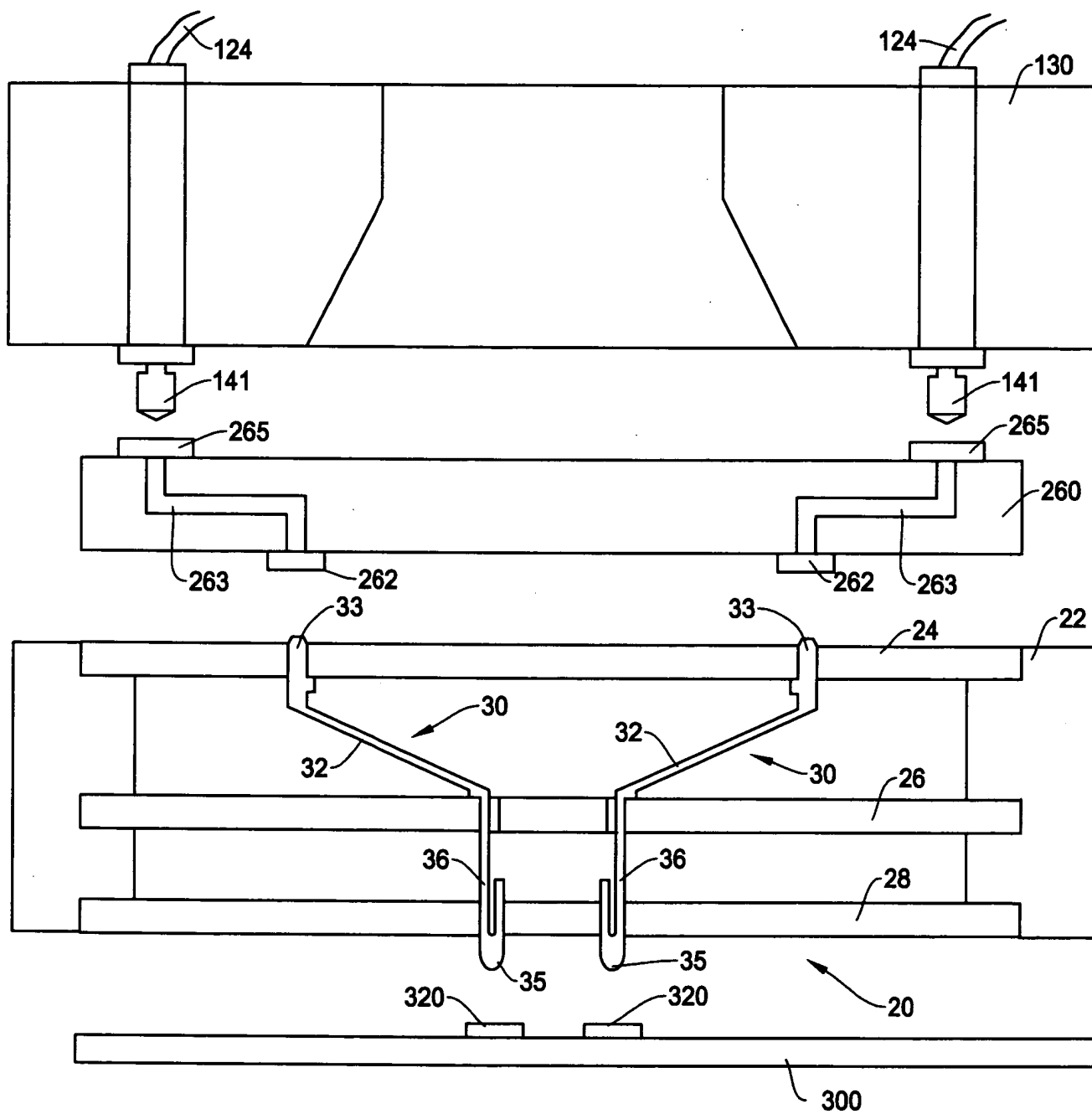


Fig. 5A (Prior Art)

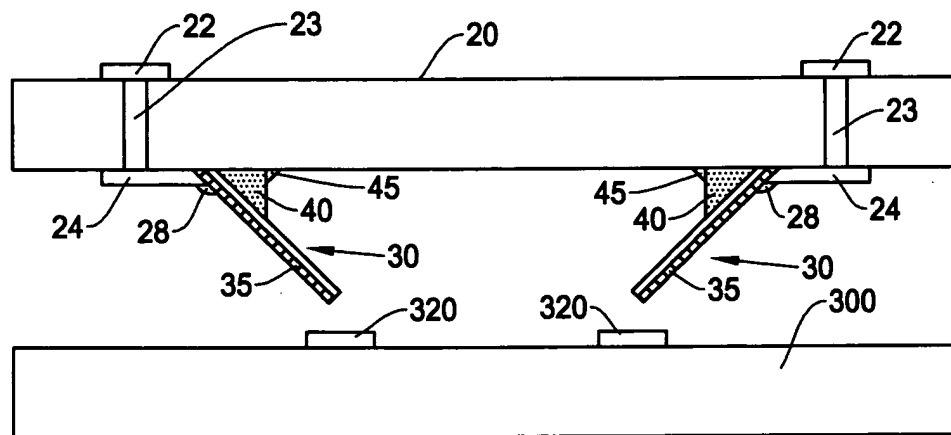


Fig. 5B (Prior Art)

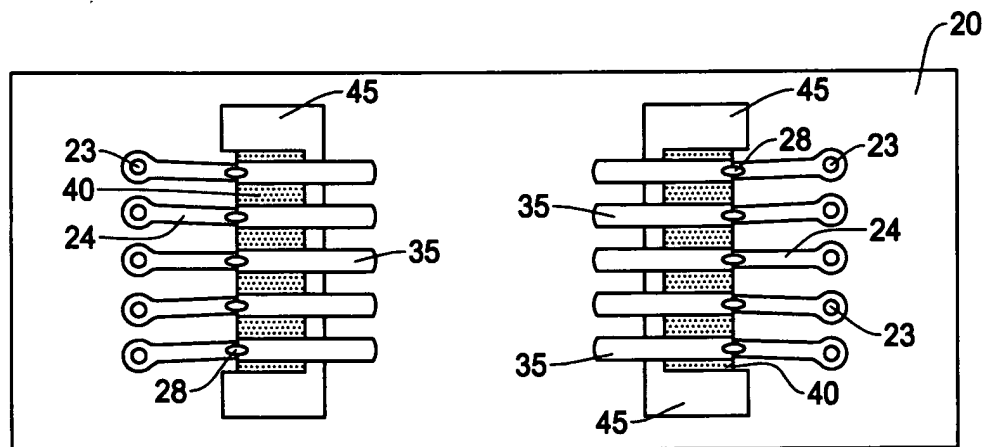


Fig. 6

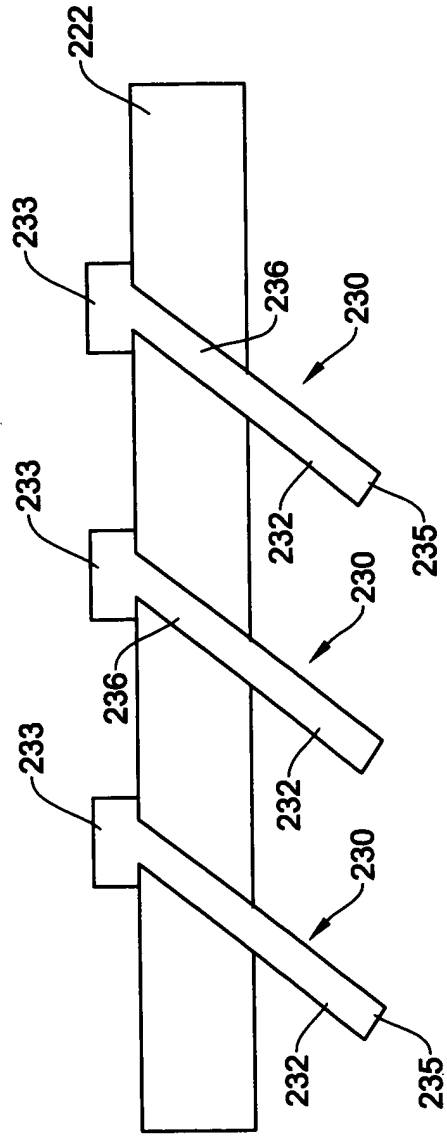


Fig. 7A

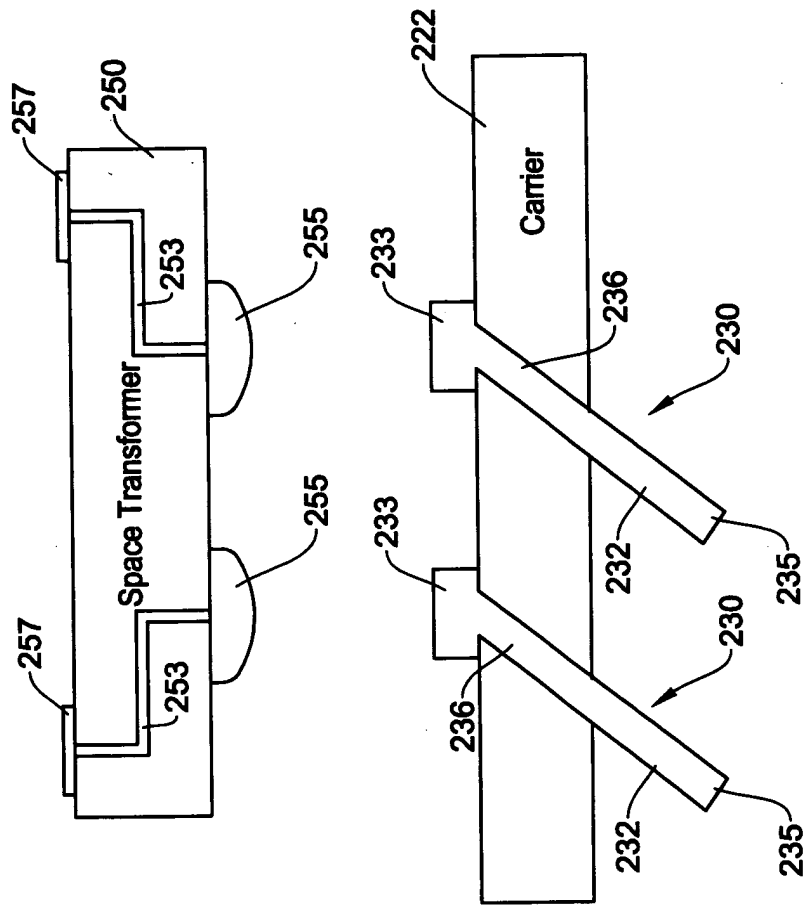


Fig. 7B

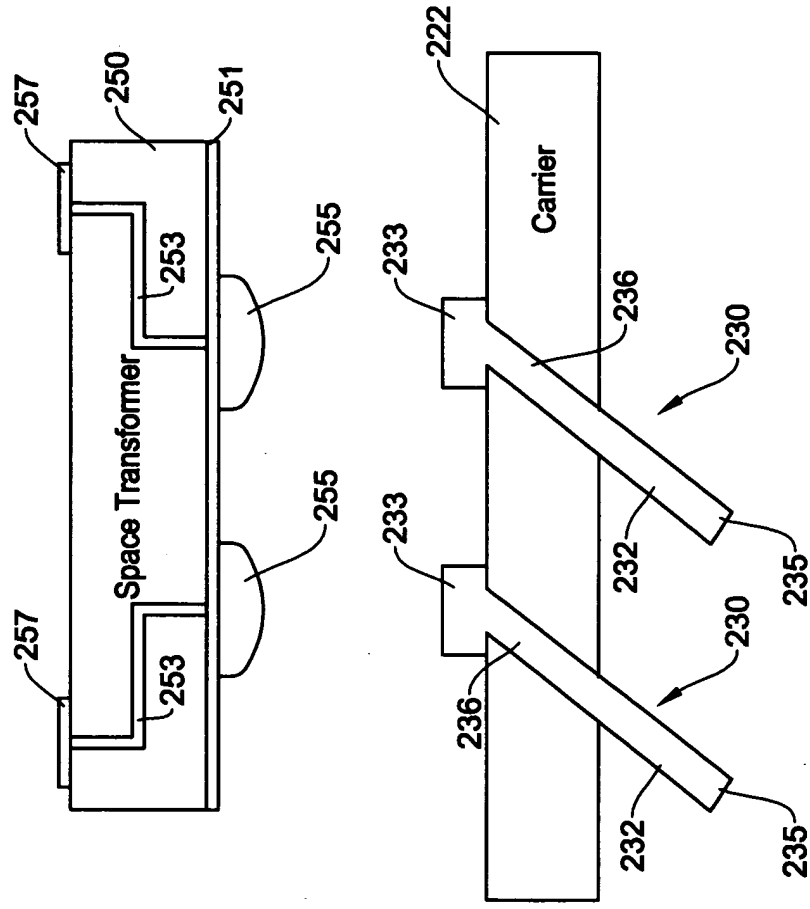


Fig. 8

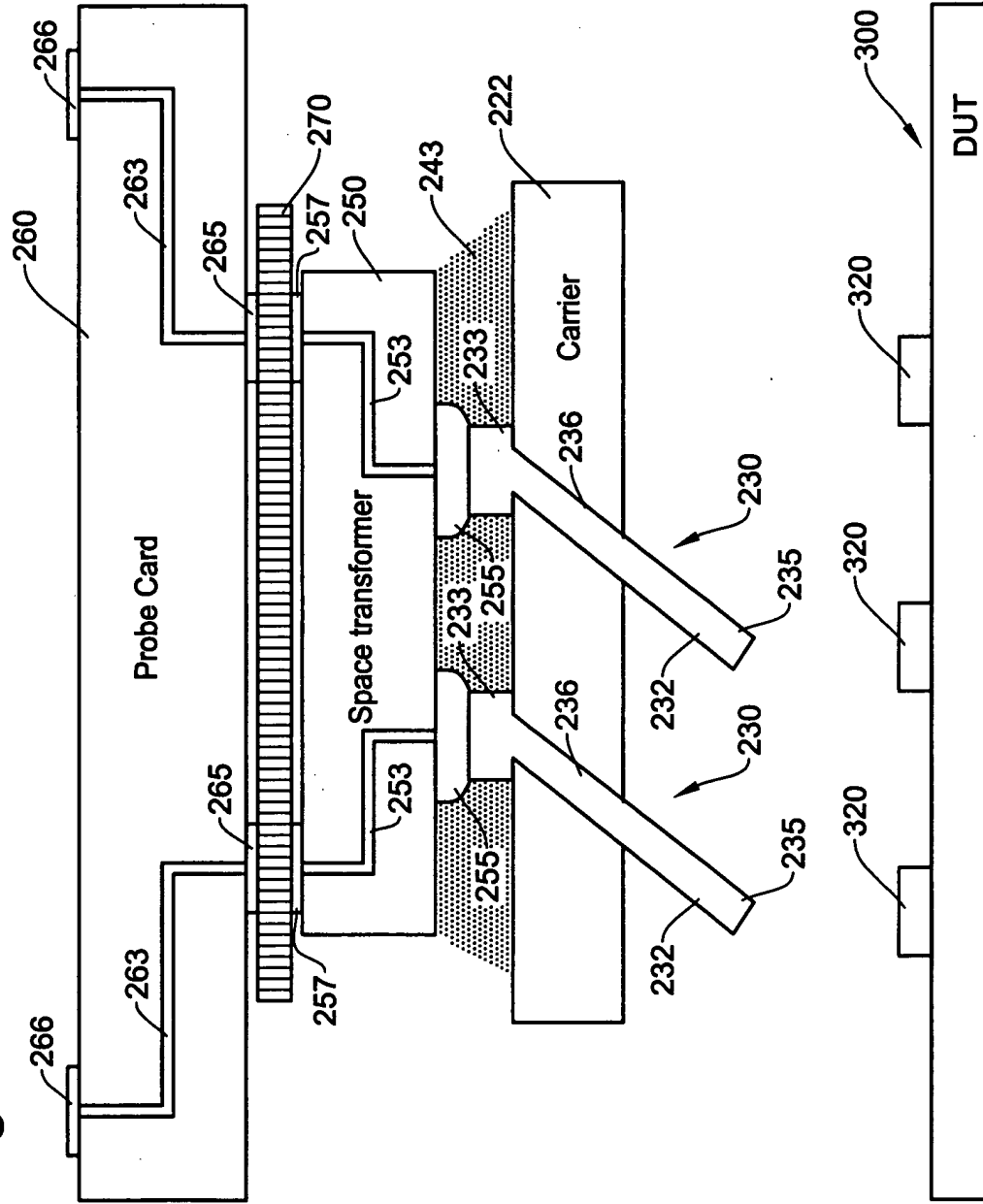


Fig. 9

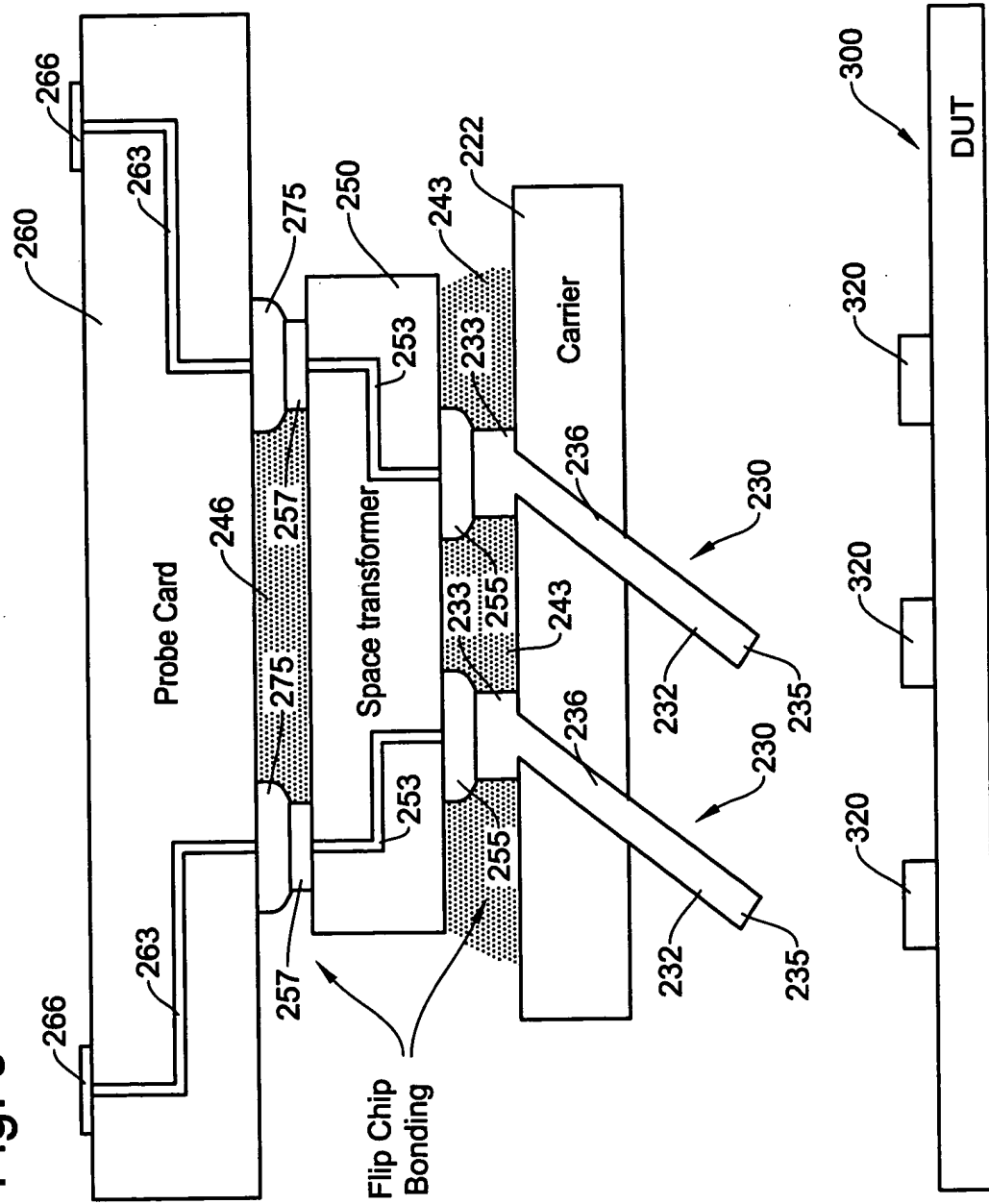


Fig. 10

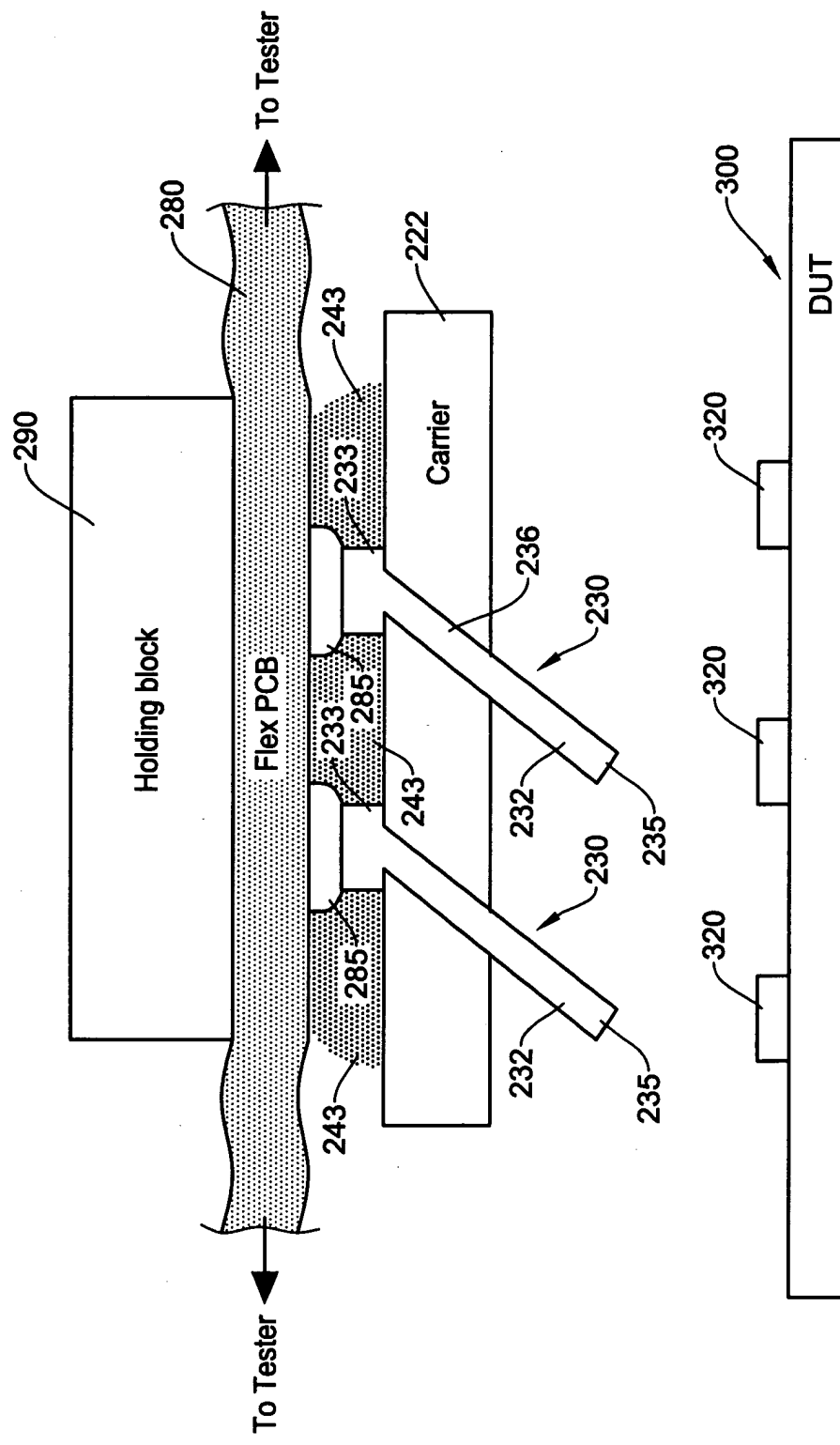


Fig. 11A

Error by Linear Tol:
 $e2 = e1 * L2 / L1$
 If $L1 \approx L2$, then $e2 \approx e1$.
 e1: fabrication tolerance
 ex. 10 μ m.
 e2: real error
 (close to the fabrication
 tolerance)

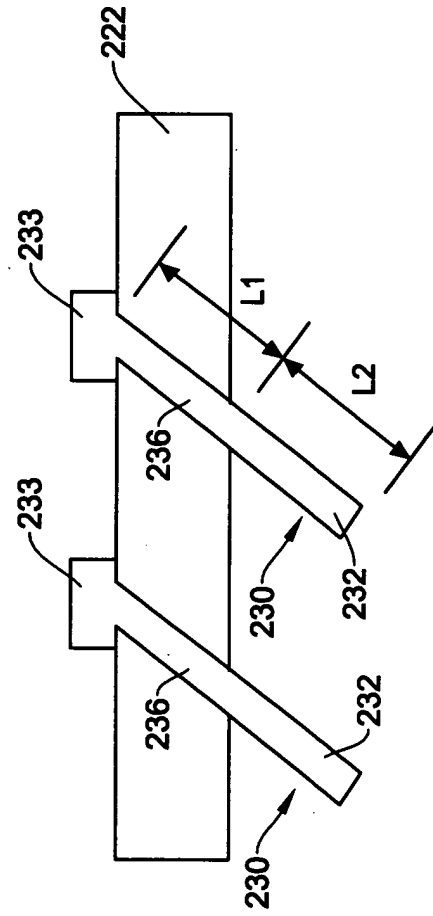
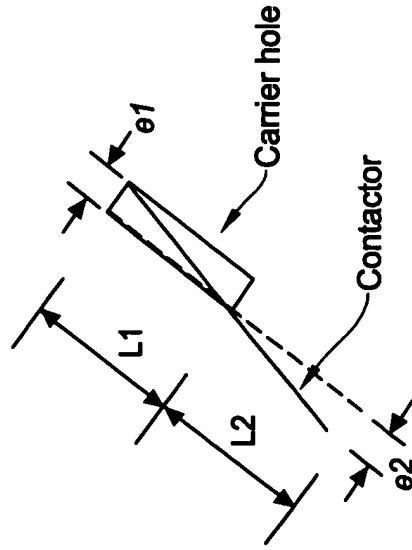


Fig. 11B

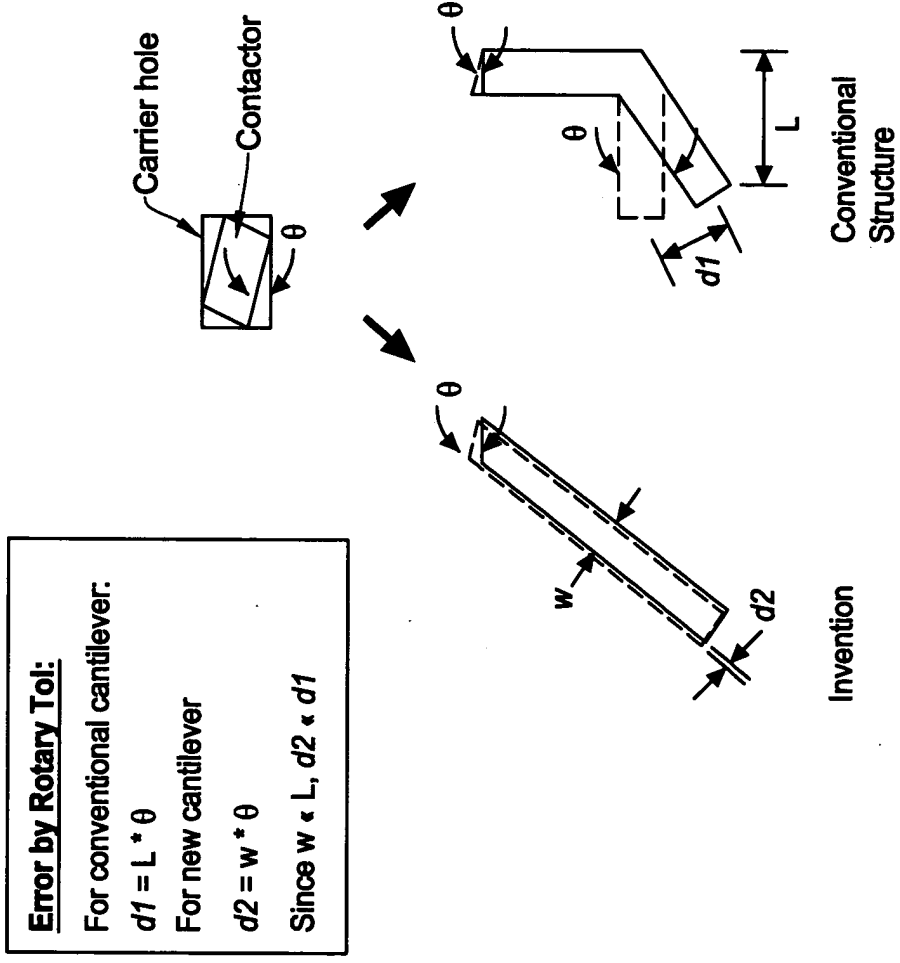
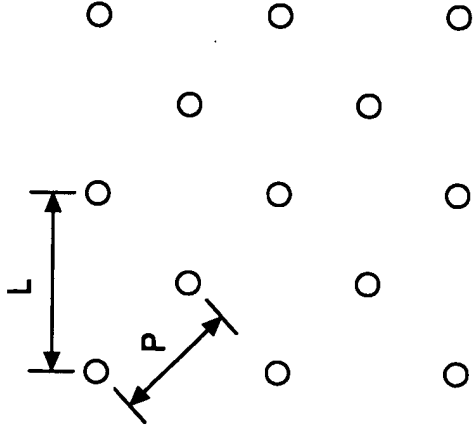


Fig. 12

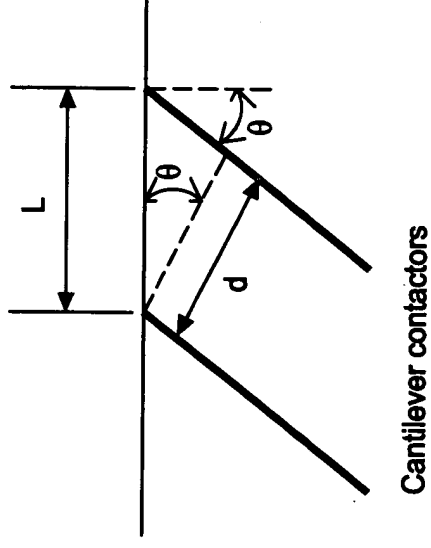


► Array pitch P

if $P = 100\mu\text{m}$

then $L = P / \cos 45^\circ = 141\mu\text{m}$

Fig. 13



$$d = L \cdot \cos\theta$$

If array pitch is $100\mu\text{m}$,
then $L = 141\mu\text{m}$;

Then $d = 141 \cdot \cos\theta$;

If $\theta = 30^\circ$, $d = 122\mu\text{m}$;

If $\theta = 45^\circ$, $d = 99.7\mu\text{m}$;

If $\theta = 60^\circ$, $d = 70.6\mu\text{m}$;

Fig. 14A

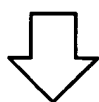
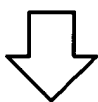
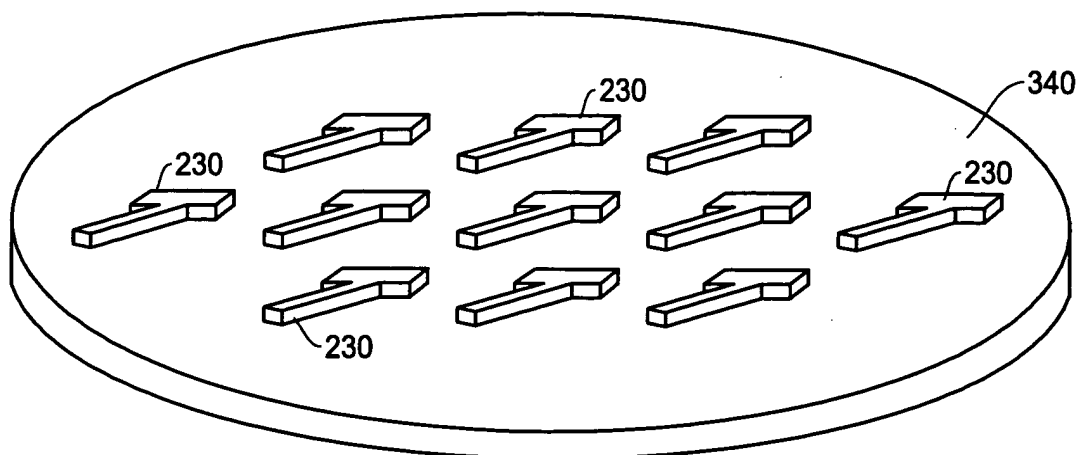


Fig. 14B

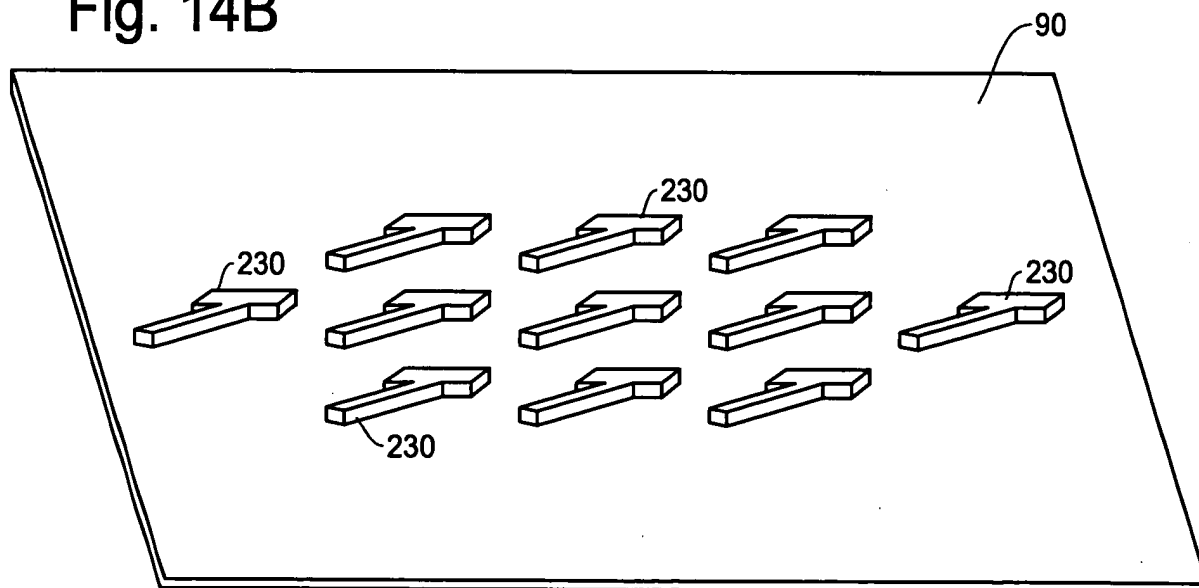


Fig. 15A

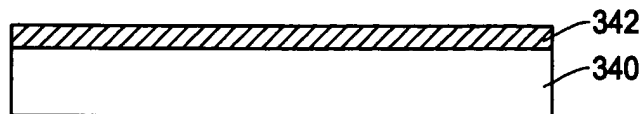


Fig. 15B

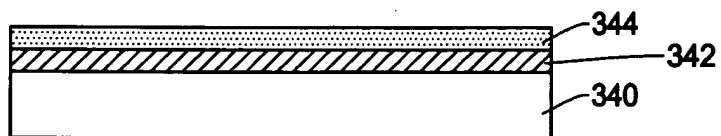


Fig. 15C

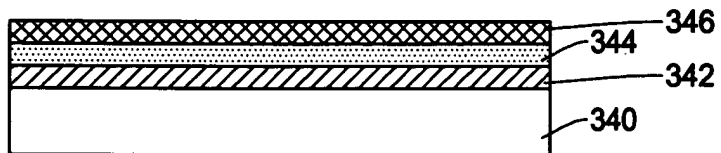


Fig. 15D

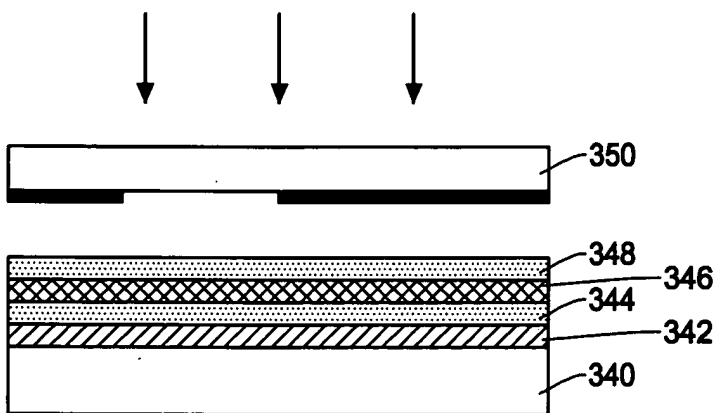


Fig. 15E

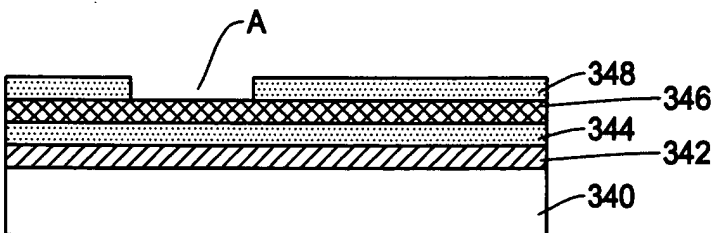


Fig. 15F

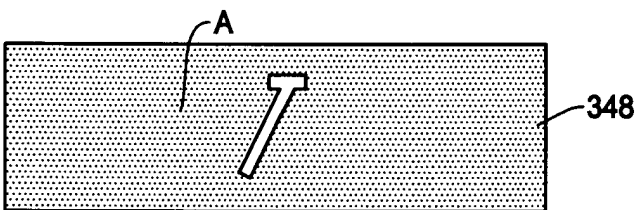


Fig. 15G

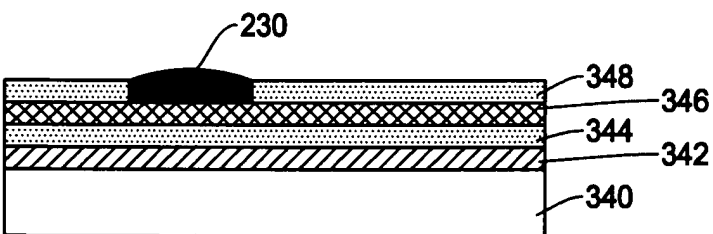


Fig. 15H

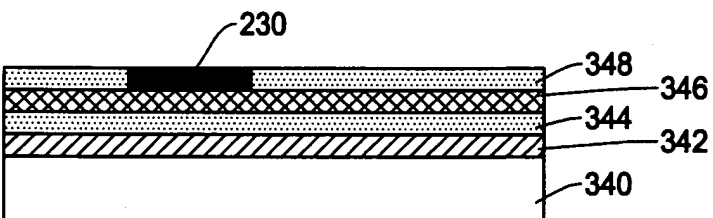


Fig. 15I

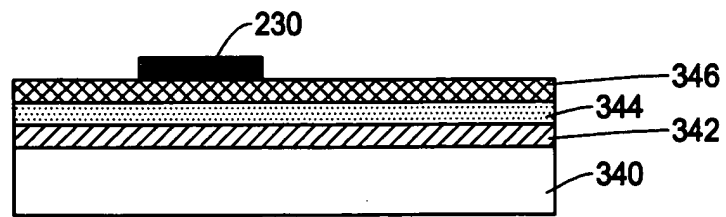


Fig. 15J

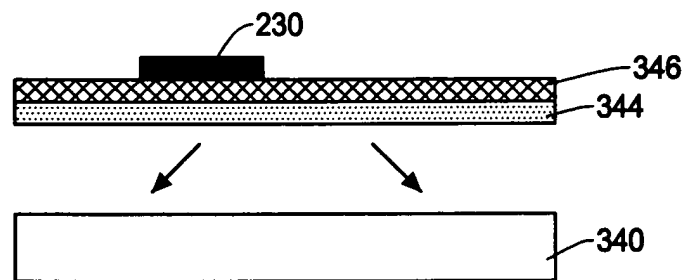


Fig. 15K

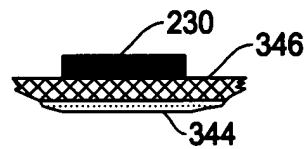


Fig. 15L

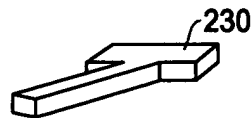


Fig. 16A

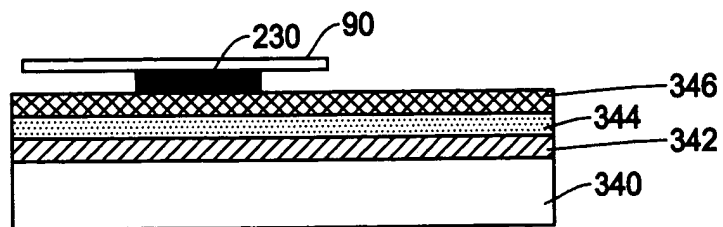


Fig. 16B

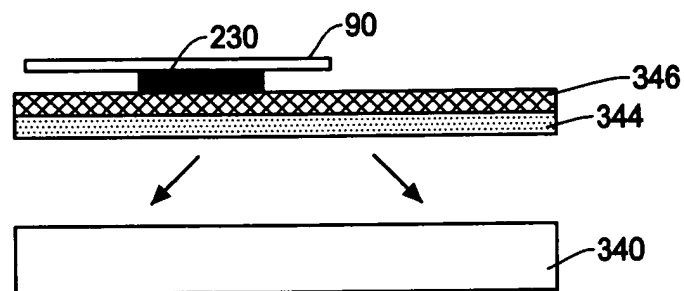


Fig. 16C

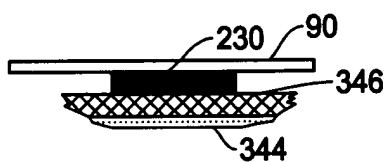


Fig. 16D

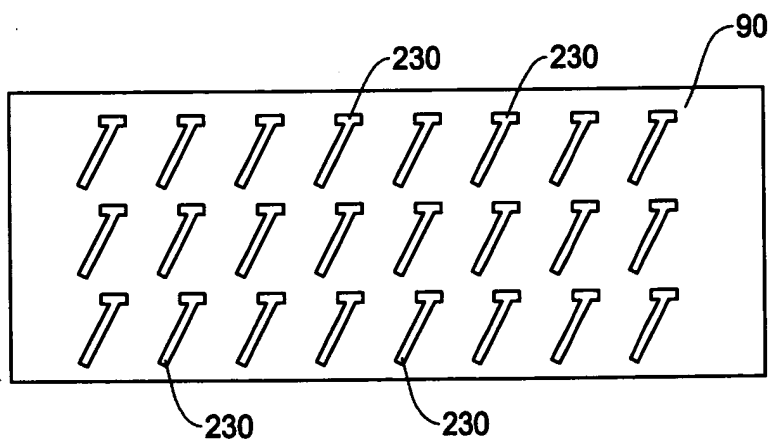


Fig. 17A

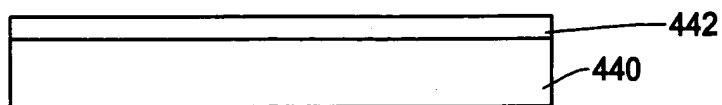


Fig. 17B

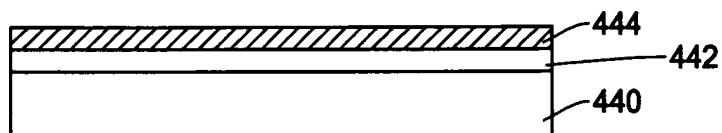


Fig. 17C

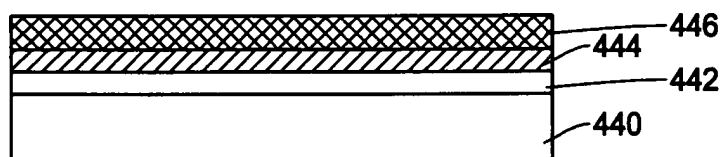


Fig. 17D

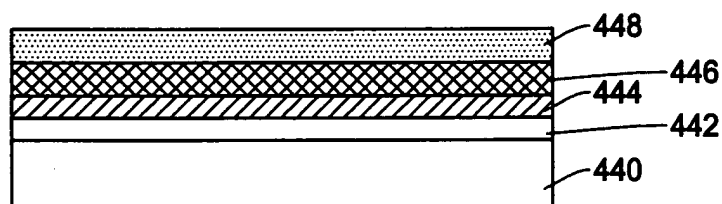


Fig. 17E

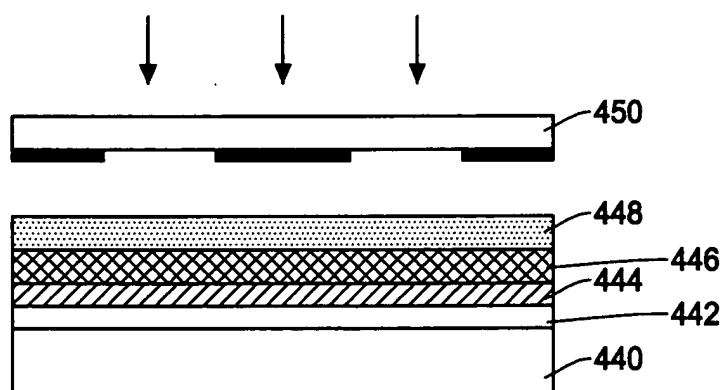


Fig. 17F

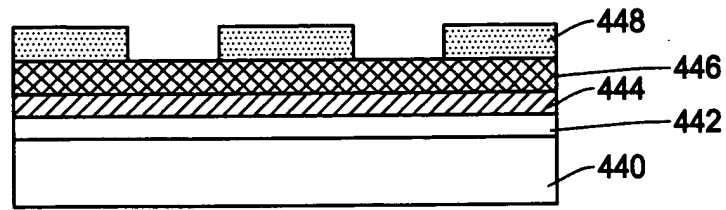


Fig. 17G

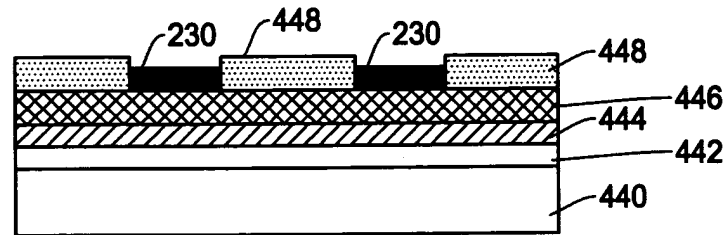


Fig. 17H

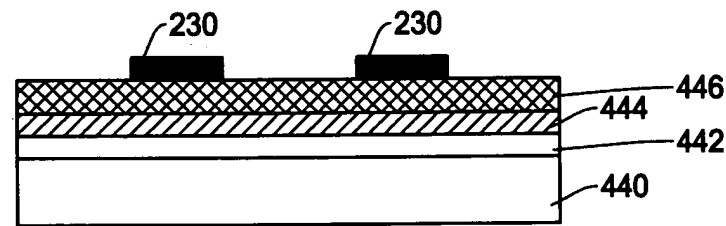


Fig. 17I

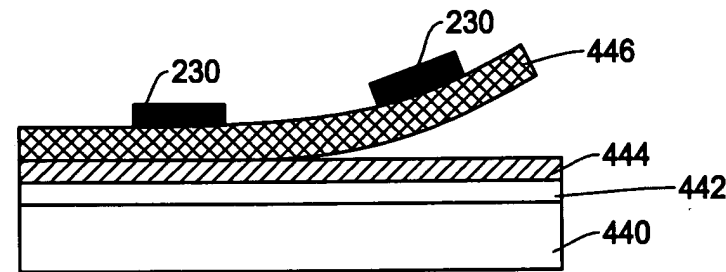


Fig. 17J

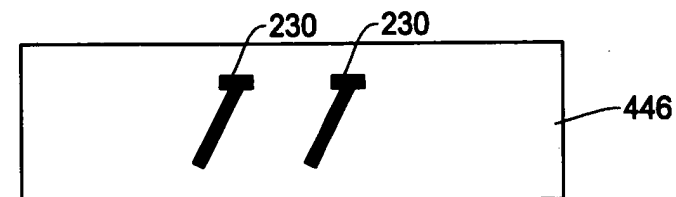


Fig. 17K



Fig. 17L

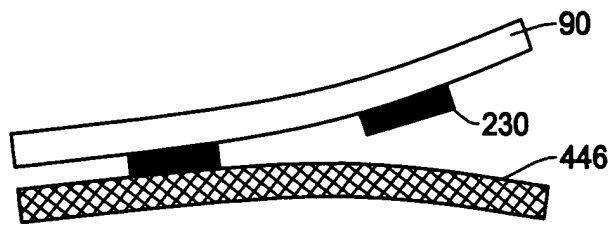


Fig. 17M

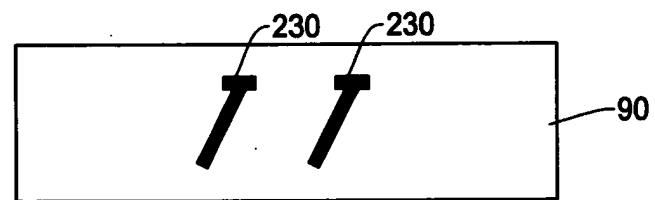
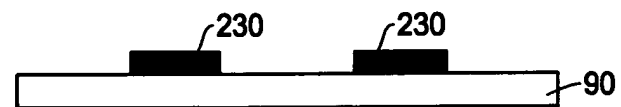


Fig. 17N



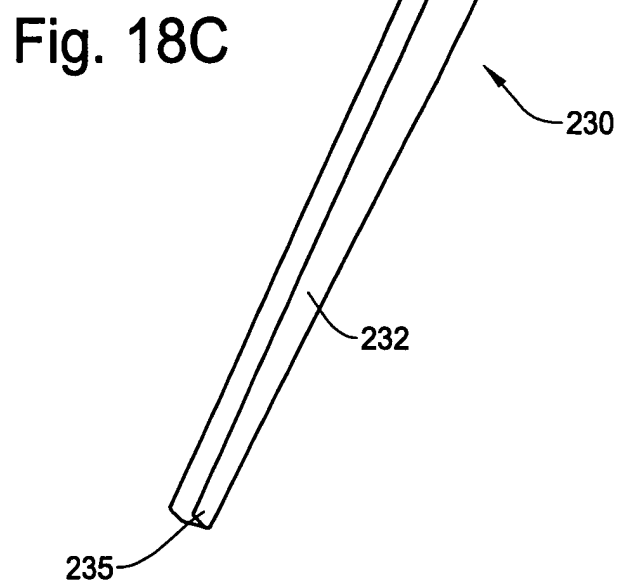
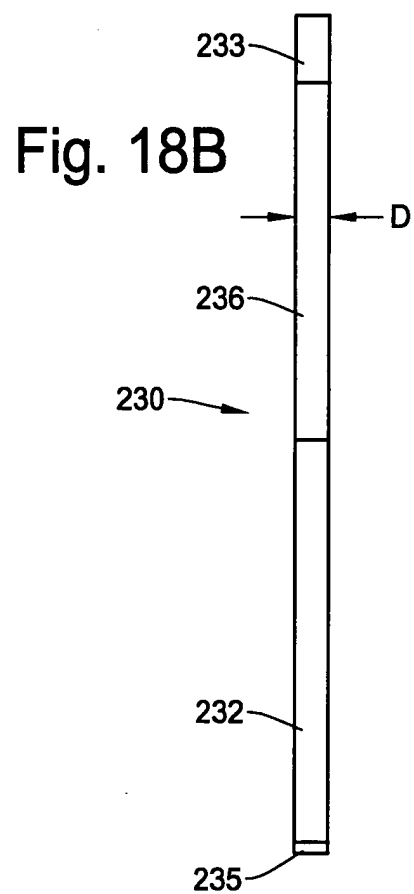
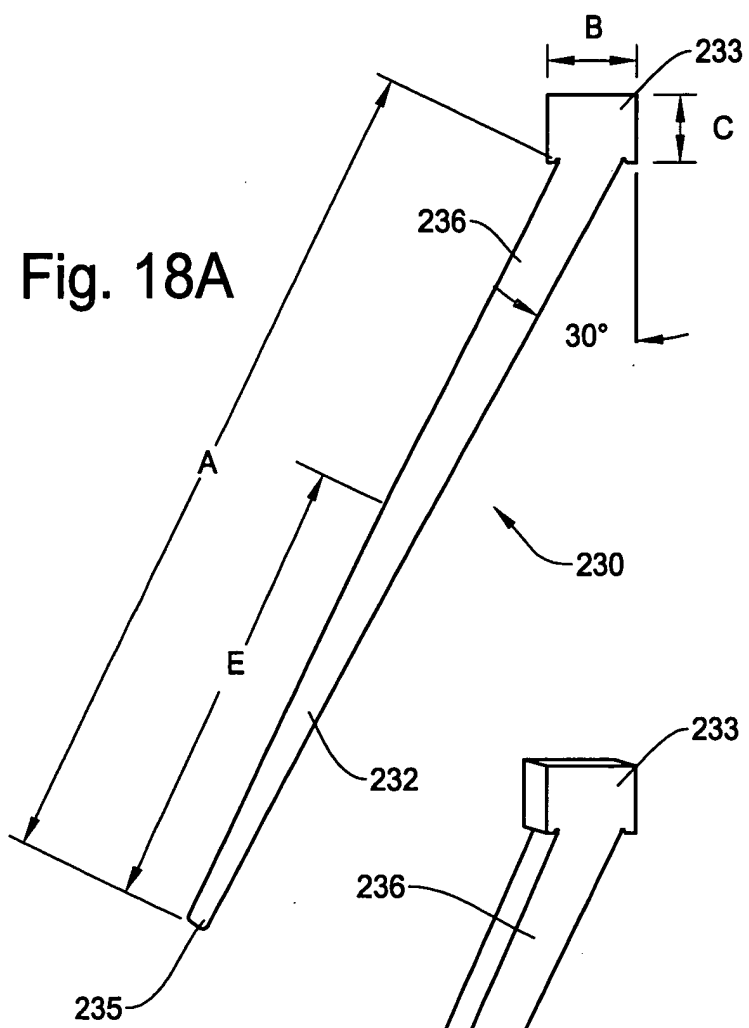


Fig. 19A

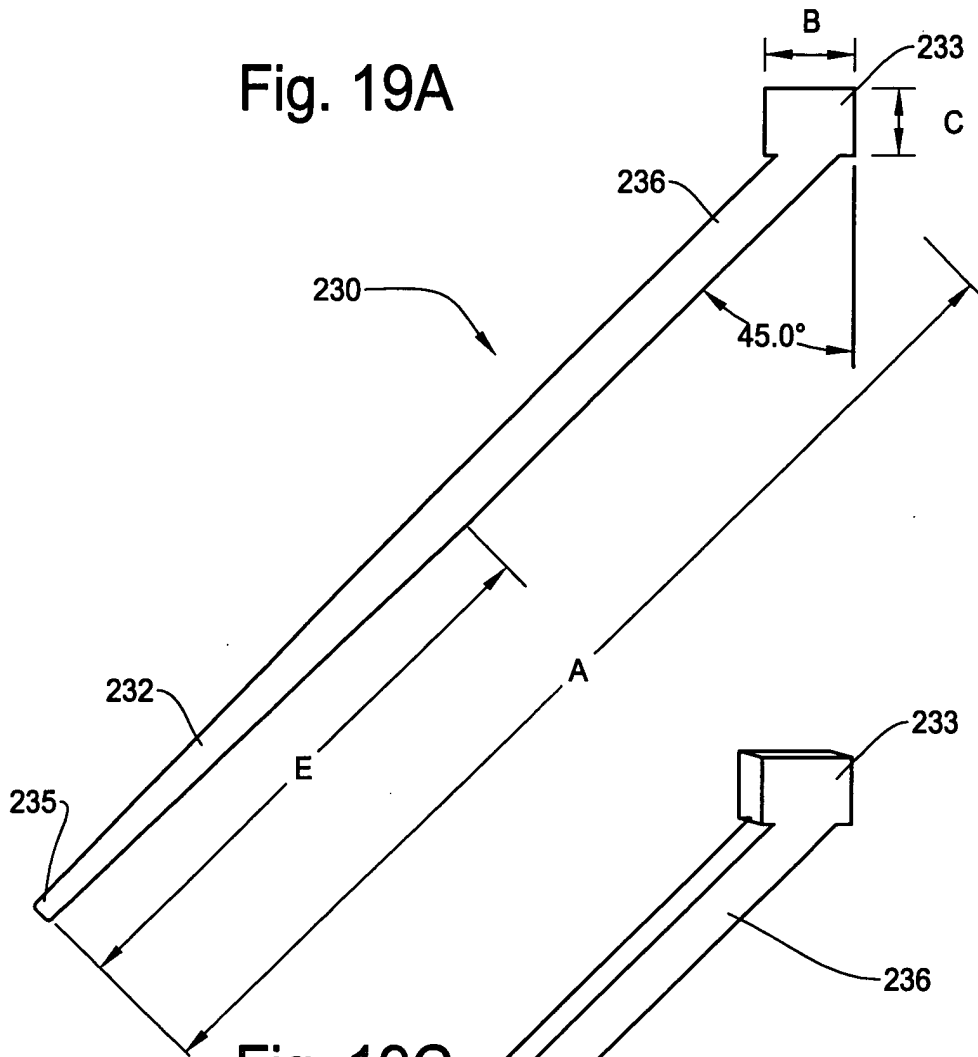


Fig. 19B

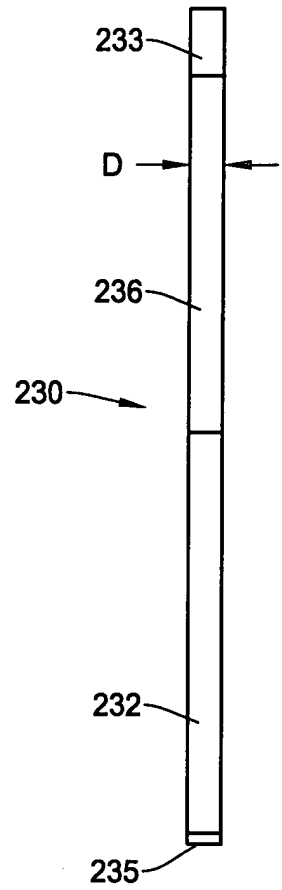


Fig. 19C

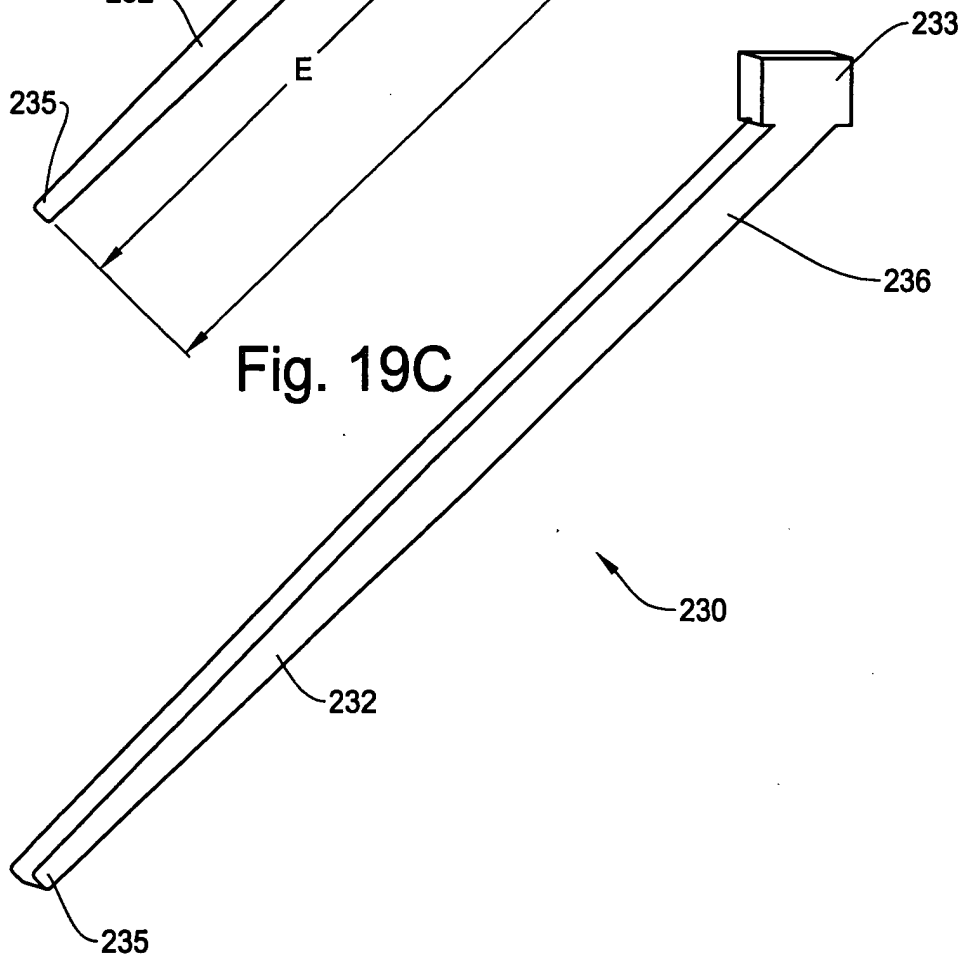


Fig. 20A

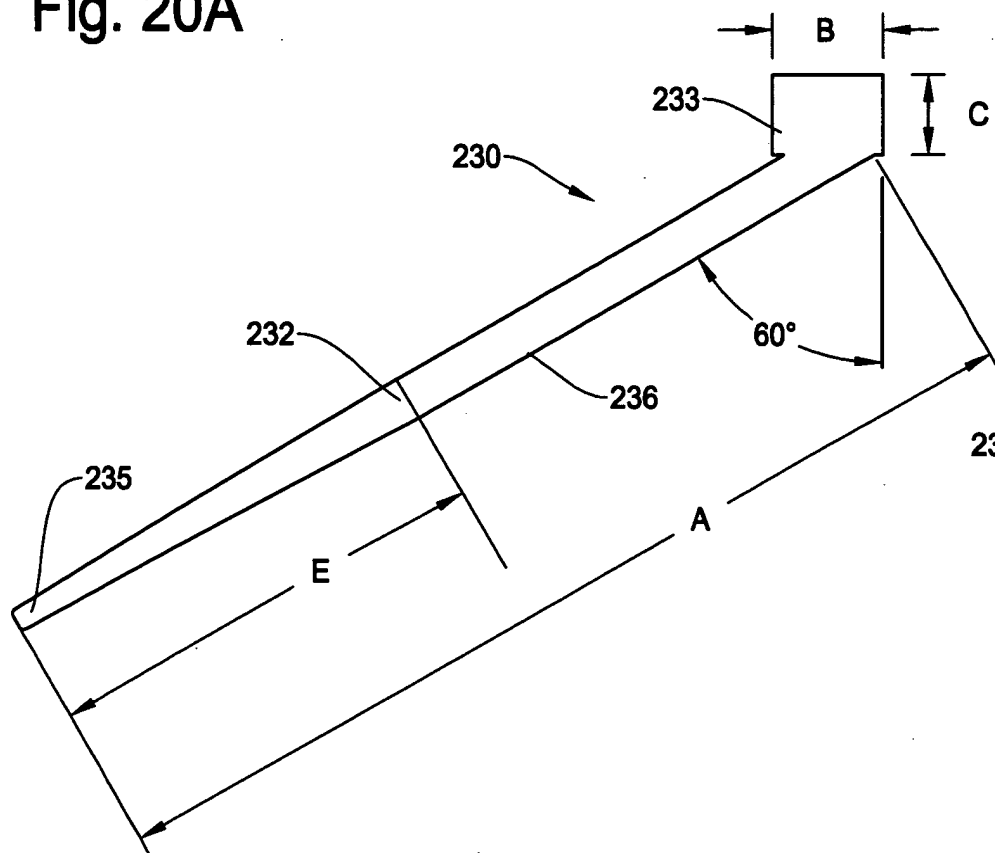


Fig. 20B

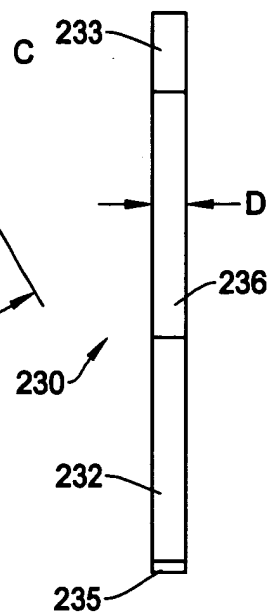
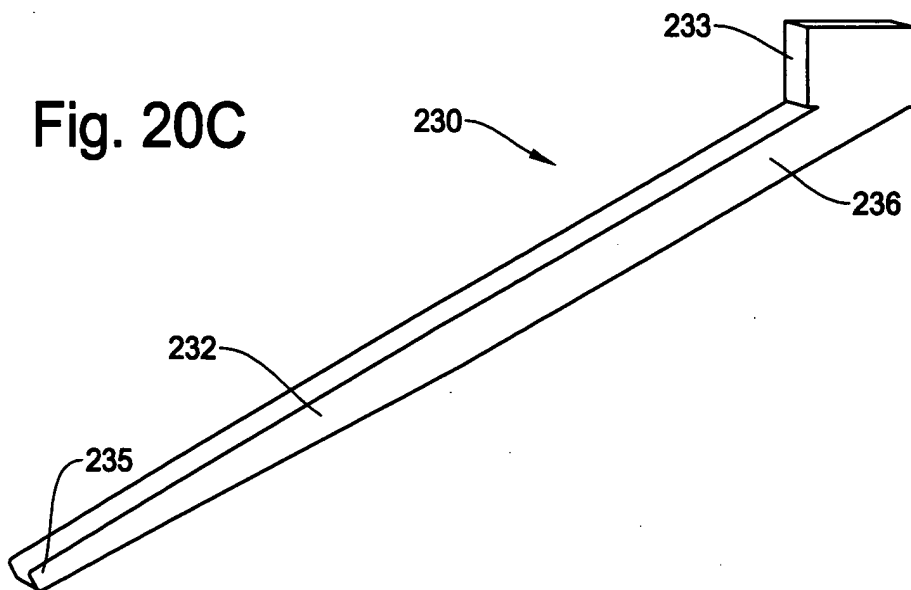
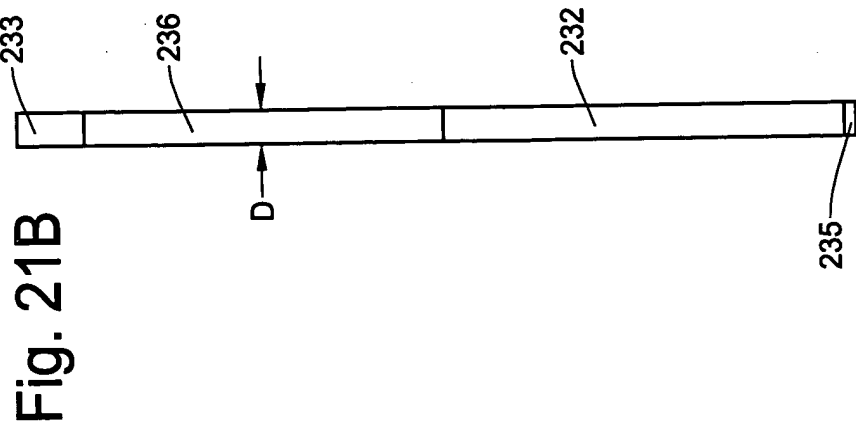
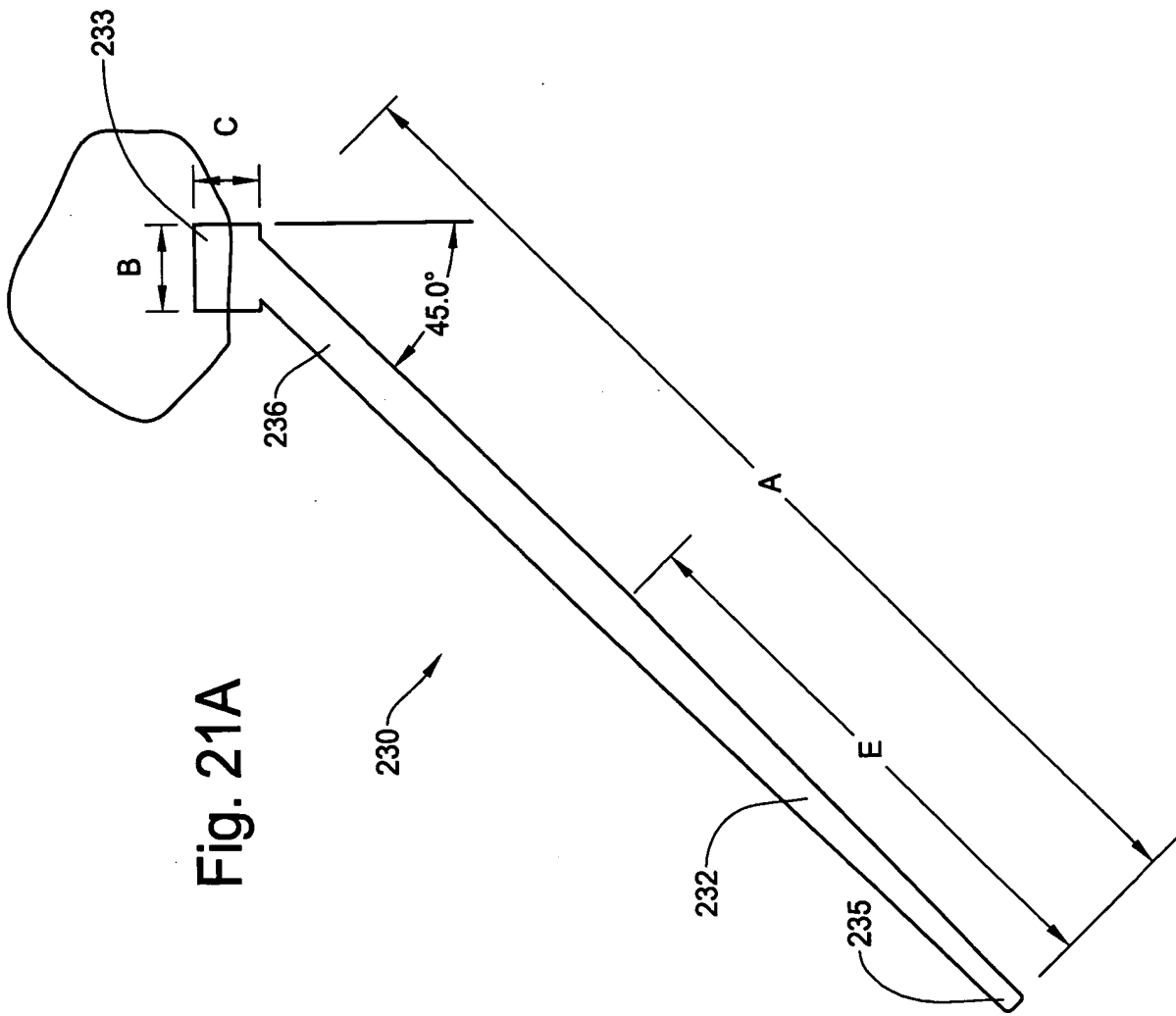


Fig. 20C





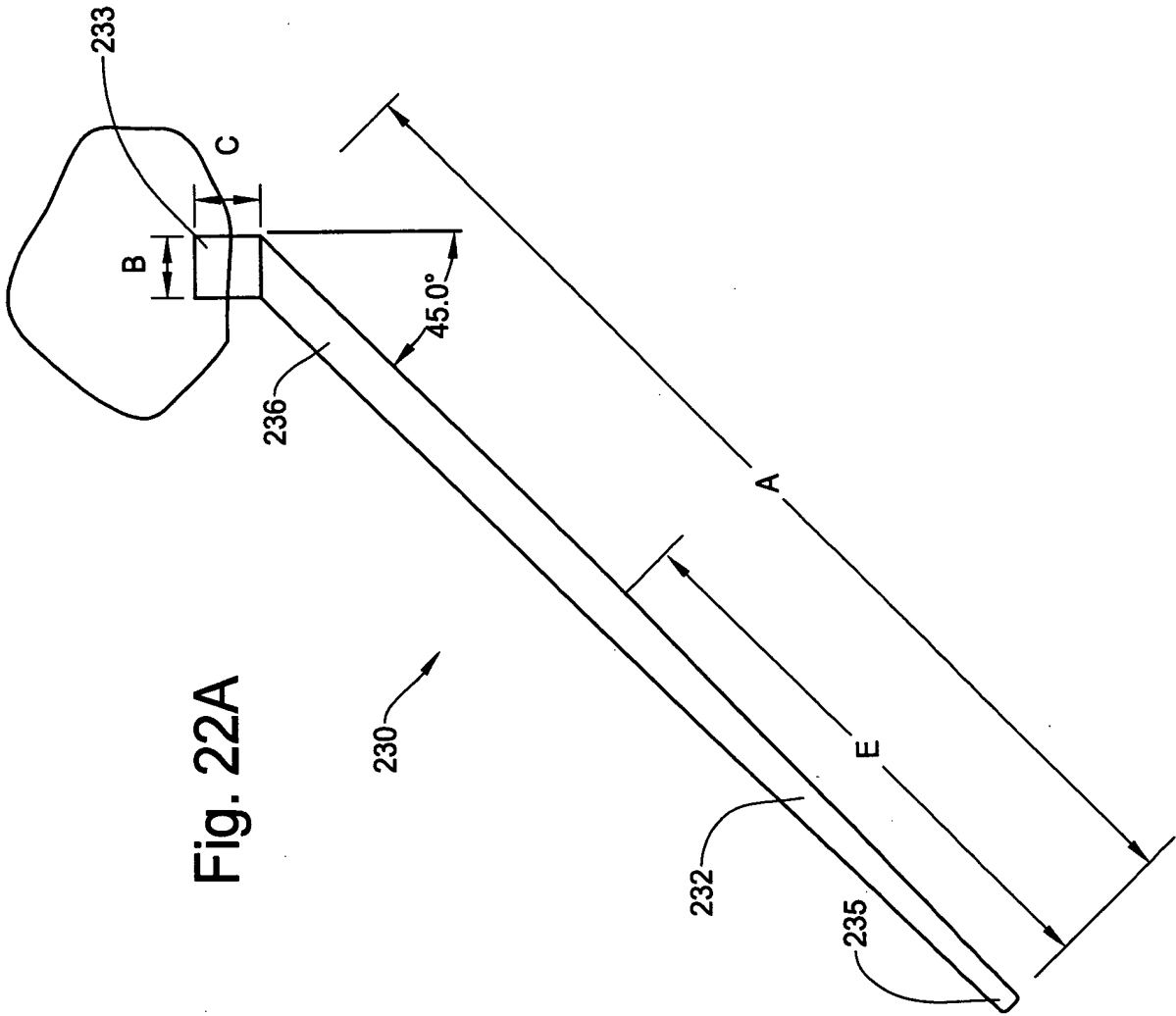


Fig. 22A

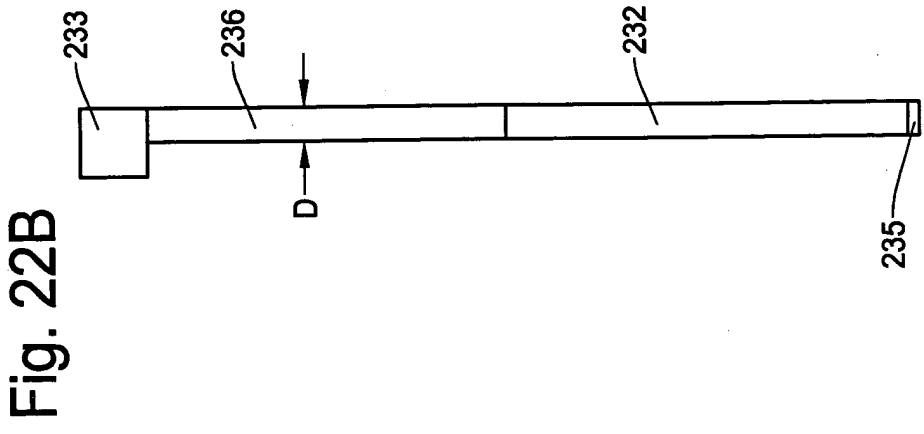


Fig. 22B

Fig. 23

	$\theta = 30^\circ$	$\theta = 45^\circ$	$\theta = 60^\circ$
Dimension (μm)	40 x 50 x 900	40 x 50 x 900	30 x 40 x 600
Spring Rate	2.84g / mil	1.85g / mil	1.1g / mil
Max. Overdrive	62.3 μm	97.3 μm	65 μm
Pitch Capability	$\geq 80\mu\text{m}$	$\geq 100\mu\text{m}$	$\geq 100\mu\text{m}$

Fig. 24

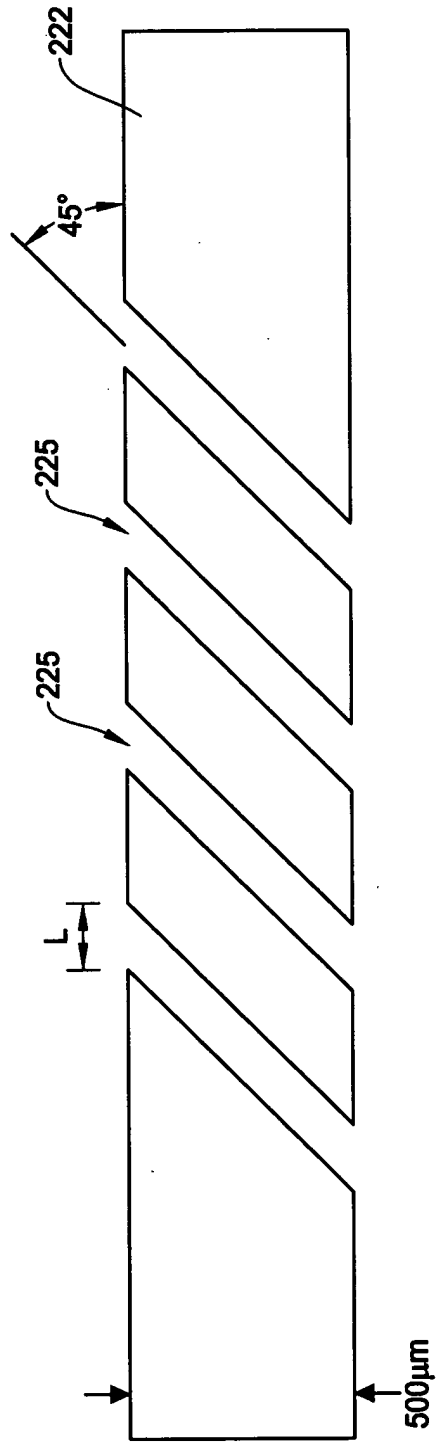


Fig. 25A

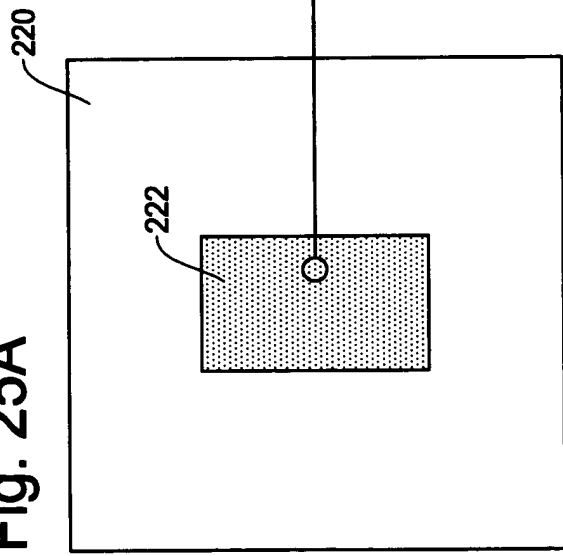


Fig. 25C

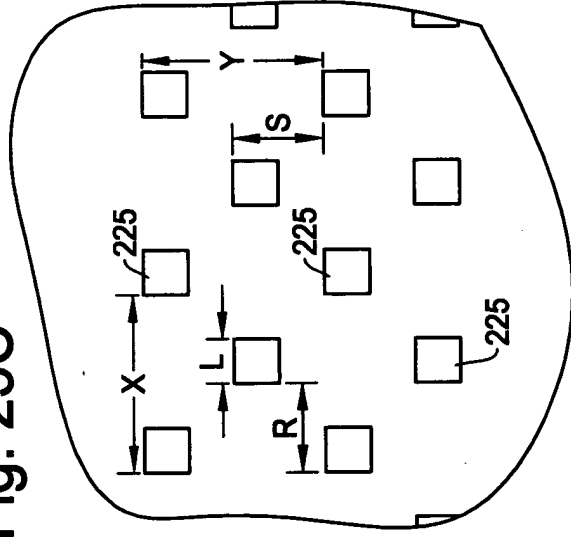


Fig. 25B

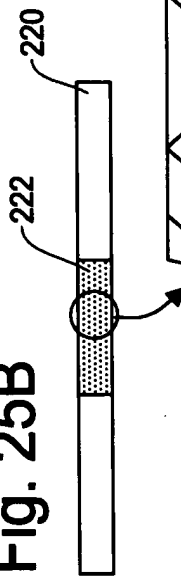


Fig. 25D

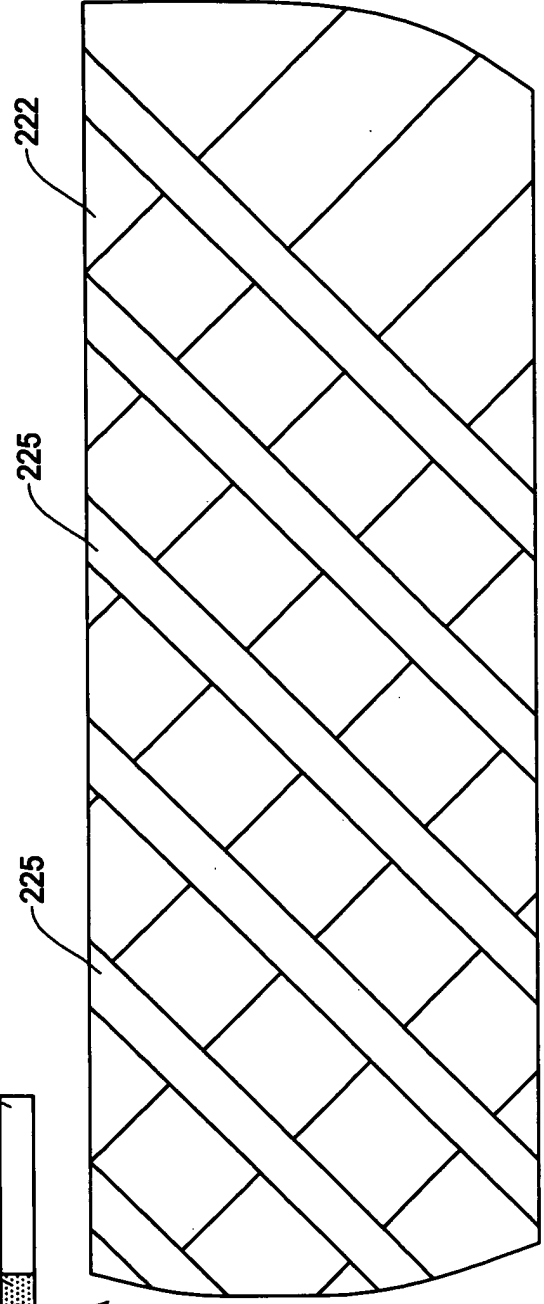


Fig. 26A

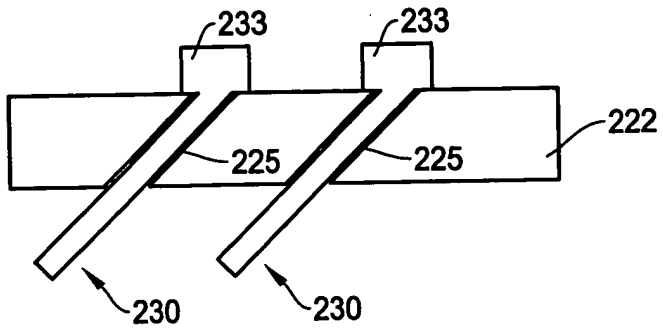


Fig. 26B

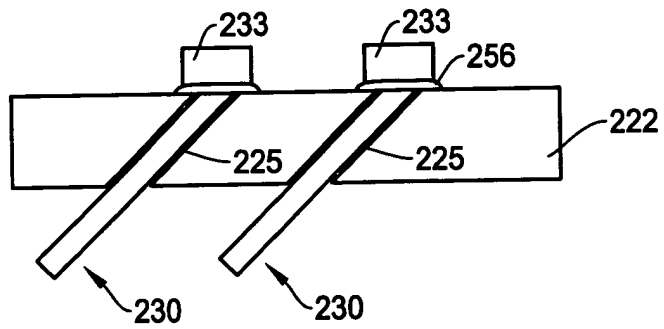


Fig. 26C

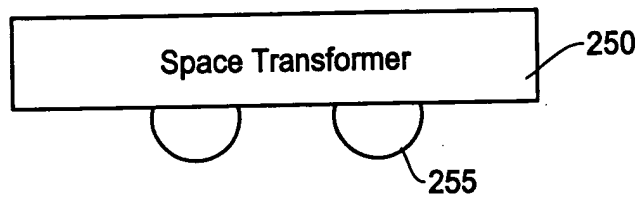


Fig. 26D

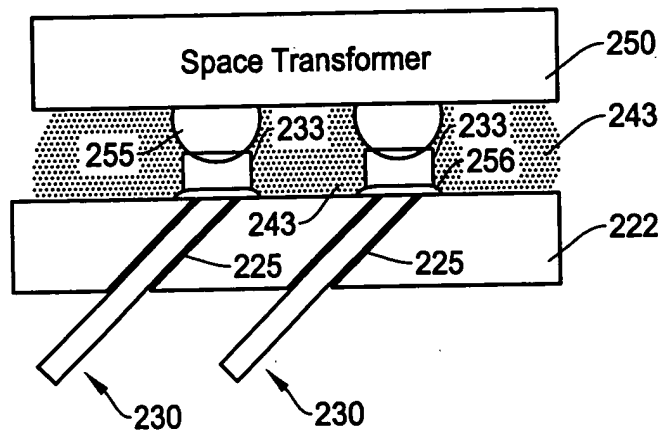


Fig. 27A

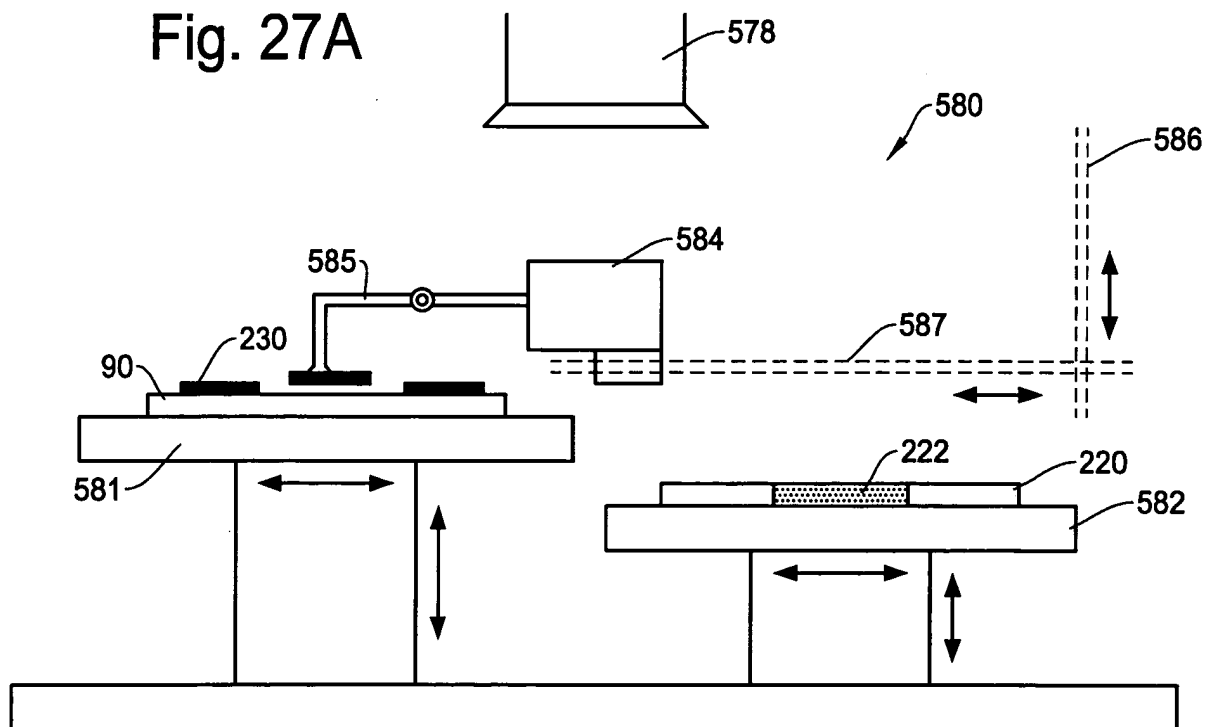


Fig. 27B

